

Serial No.: 10/574,301

Office Action dated: 10/27/2008

Response to Office Action dated: 4/27/2009

AMENDMENTS TO THE DRAWINGS

Please replace the previous Sheet 1/4, Figures 1 and 2, with the enclosed Replacement Sheet 1/4, Figures 1 and 2.

Serial No.: 10/574,301

Office Action dated: 10/27/2008

Response to Office Action dated: 4/27/2009

REMARKS

In the Office Action, the Examiner:

- acknowledged the withdrawal of claims 45-49;
- objected to the Drawings;
- objected to the Specification;
- rejected claims 26-43 under 35 U.S.C. § 112, second paragraph, as being indefinite;
- rejected claims 26-27, 29-30, 32-40, 42 and 44 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 2,919,976 to Feagan (“Feagan”); and
- rejected claim 28, 31, 41 and 43 under 35 U.S.C. § 103(a) as being unpatentable over Feagan.

In the Office Action claims 26-44 were pending. Applicants hereby amend claims 26, 43 and 44. Claims 26 and 44 are independent. Claims 26-44 are presented for consideration in light of the following remarks. Claims 45-49 stand withdrawn.

The Examiner objected to the Drawings as being improperly designated. Applicants hereby amend Figures 1 and 2 in view of the objection. Accordingly, Applicants respectfully request that the objection to the Drawings be withdrawn.

The Examiner objected to the Specification as making reference to canceled claims. Applicants respectfully submit that the cited issue was resolved in the Preliminary Amendment dated March 31, 2006 on pages 1-2. Accordingly, Applicants respectfully request that the objection to the Specification be withdrawn.

The Examiner rejected claim 26-44 under 35 U.S.C. § 112, second paragraph, as having an insufficient antecedent basis. Applicants herein amend claim 26 and 43 in view of the Examiner’s rejection. Accordingly, Applicants respectfully request that the rejection of claims 26-44 under 35 U.S.C. § 112, second paragraph, is improper and should be withdrawn.

The Examiner rejected claims 26-27, 29-30, 32-40, 42 and 44 under 35 U.S.C. § 102(b) as being anticipated by Feagan. A rejection under 35 U.S.C. § 102(b) is improper unless a single prior art reference shows or discloses each and every claim recitation. Claim 26 and 44 are independent.

Claims 26-27, 29-20, 32-40 and 42

Applicants' amended claim 26 recites:

A method for the desulphurization of the circulation of chemicals in a sulphate pulp mill, comprising collecting concentrated odorous gases that contain sulphur compounds and combusting them to oxidize the sulphur compounds, wherein the concentrated odorous gases are combusted at an air index below one in a first combustion unit, using the Claus process so that at least some of the sulphur compounds are oxidized into elemental sulphur, nonetheless so that at least 10 molar % of the sulphur compounds taken through the Claus system are taken to be combusted in a combustion device of *a second combustion unit, using a conventional combustion system*, and the elemental sulphur is recovered in liquid or solid form. (emphasis added)

Feagan does not show or disclose each and every claim recitation of amended claim 26. For instance, Feagan does not show or disclose *a second combustion unit, using a conventional combustion system* as recited by claim 26. Instead, Feagan is directed to the conversion of hydrogen sulfide into free sulfur using one or two Clause devices connected in parallel, the devices comprising converters 28, 44 and condensers 34, 50, and an input gas pretreatment boiler 4 (Feagan, Figure 1). Feagan does not show or disclose the second combustion unit is a conventional combustion system in any way.

Therefore, Feagan does not show or disclose each and every claim recitation of claim 26 of the present invention. Accordingly, Applicants respectfully submit that the rejection of claim 26 under 35 U.S.C. § 102(b) as anticipated by Feagan is improper for at least these reasons, and should be withdrawn.

Since claims 27, 29-30, 32-40 and 42 depend, either directly or indirectly, from claim 26 and include additional recitations thereto, Applicants respectfully submit that the rejection of claims 27, 29-30, 32-40 and 42 under 35 U.S.C. § 102(b)

as anticipated by Feagan is improper for at least the same reasons, and should be withdrawn.

In addition, regarding claim 32, claim 32 recites that part of the collected odorous gases are conducted to Claus combustion and part of the sulphur compounds from the Claus combustion are conducted to conventional odorous gas combustion, or optionally part of the collected odorous gases are conducted directly to conventional odorous gas combustion. Feagan does not show or disclose a *conventional odorous gas combustion*. Instead, Feagan only shows Claus systems. Also, since Feagan does not show or disclose a *conventional odorous gas combustion*, Feagan cannot possibly show or disclose *conducting gases directly to conventional odorous gas combustion*. Thus, Feagan does not show or disclose the *conventional odorous gas combustion* as recited in claim 32.

Regarding claim 33, claim 33 recites that at least part of the sulphur compounds of the concentrated odorous gases coming from the Claus combustion are conducted to conventional odorous gas combustion. As stated in regard to claim 32, Feagan does not show or disclose a *conventional odorous gas combustion*. Instead, Feagan only shows Claus systems. Also, since Feagan does not show or disclose a *conventional odorous gas combustion*, Feagan cannot possibly show or disclose *conducting gases from the Claus combustion to the conventional odorous gas combustion*. Thus, Feagan does not show or disclose the *conventional odorous gas combustion* as recited in claim 33.

Regarding claim 34, claim 34 recites that at least 10 molar % of the sulphur compounds from the Claus combustion are conducted to combustion in conventional combustion systems. Feagan does not show or disclose *conventional combustion systems*. Instead, Feagan only shows Claus systems. Also, since Feagan does not show or disclose *conventional combustion systems*, Feagan cannot possibly show or disclose *conducting the sulphur compounds from the Claus combustion to combustion in the conventional combustion systems*. Thus, Feagan does not show or disclose the *conventional odorous gas combustion* as recited in claim 34.

Regarding claim 35, claim 35 recites that part of the concentrated odorous gases are lead into a first combustion unit, which comprises one or more Claus system combustion devices and part is lead into the second combustion unit comprising combustion in a soda recovery boiler, odorous gas boiler, lime sludge

reburning kiln or flame or into more than one of these systems. Feagan does not show or disclose a *soda recovery boiler, odorous gas boiler, lime sludge reburning kiln or flame* as recited in claim 35. Instead, Feagan only shows Claus systems, as discussed above. Thus, Feagan does not show or disclose the *soda recovery boiler, odorous gas boiler, lime sludge reburning kiln or flame* as recited in claim 35.

Regarding claim 37, claim 37 recites that the collected odorous gases are combusted in the first combustion unit in the Claus system combustion device and the residual tail gases are conducted to the second combustion unit to be combusted in the soda recovery boiler, odorous gas boiler, lime sludge reburning kiln or flame or in more than one of these systems. Feagan does not show or disclose a *soda recovery boiler, odorous gas boiler, lime sludge reburning kiln or flame*. Instead, Feagan only shows Claus systems. Thus, Feagan cannot possibly show or disclose that residual tail gases are conducted to the second combustion unit to be combusted in *one or more of these systems*. In fact, Feagan does not show or disclose what is done with the “uncondensed and unreacted gases that are taken from the system through lines 54” in any way (Feagan, col. 4, ll. 24-26). Thus, Feagan does not show or disclose the *residual tail gases are conducted to the second combustion device* as recited in claim 37.

Regarding claim 42, claim 42 recites that the odorous gases are collected from the source of concentrated odorous gases of a cooking department or an evaporator plant separately or in combination. First, Feagan does not show or disclose that odorous gases are collected *separately*. At best, Feagan discloses, while describing the prior art, that the hydrogen sulfide-containing gases are collected and introduced into a furnace “all ... together” (Feagan, col. 1, ll. 4-38). Feagan also discloses that the “aforesaid gas in line 2 is passed into boiler 4” while describing the pretreatment of the input gas before conducting said gas to the first converter 28 (Feagan, col. 3, l. 4 and Figure 1). These portions of Feagan do not show or disclose that odorous gases are, or can be, collected *separately* as recited in claim 42. Second, Feagan does not show or disclose that the odorous gases are collected from *cooking department or an evaporator plant*. Instead, Feagan discloses, while describing the prior art, that the hydrogen sulfide-containing gases are first processed by having “the hydrogen sulfide ... separated from the nonacid components by means of an ethanol-amine scrubbing operation” and

then conducted to the furnace (e.g. the Claus system) (Feagan, col. 1, ll. 24-26). Later, Feagan discloses that “aforesaid gas in line 2 is passed into boiler 4” (Feagan, col. 3, ll. 4 and Figure 1). Neither of these pretreatment processes disclosed by Feagan concerns a *cooking department or an evaporator plant*. Thus, Feagan does not show or disclose *cooking department or an evaporator plant* as recited in claim 42.

Therefore, Feagan does not show or disclose each and every recitation of claims 32-35, 37 or 42. Accordingly, Applicants respectfully submit that the rejection of claims 32-35, 37 and 42 under 35 U.S.C. § 102(b) as being anticipated by Feagan is improper for at least these reasons as well, and should be withdrawn.

Claim 44

Applicants' amended claim 44 recites:

A use of the Claus process for the desulphurization of the circulation of chemicals in a sulphate pulp mill, so that the concentrated odorous gases are combusted with substoichiometric amounts of air into elemental sulphur in one or more combustion units of the Claus system and at least 10 molar % of the sulphur compounds taken through the Claus system are taken to be combusted in the combustion device of *the at least one second combustion unit of a conventional combustion system*. (emphasis added)

Feagan does not show or disclose each and every claim recitation of amended claim 44. For instance, Feagan does not show or disclose *the at least one second combustion unit of a conventional combustion system* as recited by claim 44. Instead, Feagan is directed to the conversion of hydrogen sulfide into free sulfur using one or two Clause devices connected in parallel, the devices comprising converters 28, 44 and condensers 34, 50, and an input gas pretreatment boiler 4 (Feagan, Figure 1). Feagan does not show or disclose at least one second combustion unit is *of a conventional combustion system* in any way.

Therefore, Feagan does not show or disclose each and every claim recitation of claim 44 of the present invention. Accordingly, Applicants respectfully submit that the rejection of claim 44 under 35 U.S.C. § 102(b) as anticipated by Feagan is improper for at least these reasons, and should be withdrawn.

The Examiner rejected claims 28, 31, 41 and 43 under 35 U.S.C. § 103(a) as unpatentable over Feagan. A rejection under 35 U.S.C. § 103(a) is improper unless the Examiner establishes a prima facie case of obviousness. A prima facie case of obviousness is not established unless the prior art references, either alone or in combination, teach or suggest each and every claim recitation. Claims 28, 31, 41 and 43 depend, either directly or indirectly, from claim 26 and include additional recitations thereto.

Feagan does not teach or suggest each and every claim recitation of claim 26 the present invention. For instance, Feagan do not teach or suggest *a second combustion unit, using a conventional combustion system* as recited in claim 26. Instead, Feagan is directed to the conversion of hydrogen sulfide into free sulfur using one or two Claus devices connected in parallel, the devices comprising converters 28, 44 and condensers 34, 50, and an input gas pretreatment boiler 4 (Feagan, Figure 1). Feagan does not teach or suggest the *second combustion unit* uses *a conventional combustion system* in any way. If anything, Feagan teaches away from the *second combustion unit being a conventional combustion system* because Feagan is specifically directed to a “novel method for controlling the temperature employed in effecting” a reaction for recovering “elemental sulfur from hydrogen sulfide-containing gases” (Feagan, col. 1, ll. 15-20) by “improving control of reaction temperatures at lower temperature levels” (Feagan, col. 2, ll. 27-28). Feagan teaches a way of improving upon the deficiencies of known Claus devices by making such devices operable at lower temperatures. A Claus system operable at lower temperatures is not *a conventional combustion system* as recited in claim 26.

Therefore, Feagan does not teach or suggest each and every claim recitation of Applicants’ claim 26. Since claims 28, 31, 41 and 43 depend from claim 26, Applicants respectfully submit that the rejection of claims 28, 31, 41 and 43 under 35 U.S.C. § 103(a) as unpatentable over Feagan is improper for at least the same reasons as claim 26, and should be withdrawn.

Serial No.: 10/574,301
Office Action dated: 10/27/2008
Response to Office Action dated: 4/27/2009

Applicants respectfully submit that nothing in the current Amendment constitutes new matter. Support for the amendments may be found in, at least, claim 34.

Having traversed each and every objection and rejection, Applicants respectfully request claims 26-44 be passed to issue.

Applicants hereby petition for a three-month extension of time to respond to the present Office Action. Applicants' Attorneys hereby authorize the Commissioner to charge the three-month extension fee of \$1,110.00 to the Deposit Account 13-0235. Applicants believe that no other fees are due in connection with this Amendment and Response. If any fees are deemed necessary, please charge them to Deposit Account 13-0235.

Respectfully submitted,

By /Marina F. Cunningham/
Marina F. Cunningham
Registration No. 38,419
Attorney for the Applicants

McCORMICK, PAULDING & HUBER LLP
CityPlace II, 185 Asylum Street
Hartford, CT 06103-3410
(860) 549-5290